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Amsterdam, July 13, 2005

Dear Sirs,

Response to the Written Opinion of the ISA
Re: International Application PCT/EP2005/000929
Our ref. ACH 3038 P1WO/00137.0091.00PC00

In response to the Written Opinion dated 29 June, 2005, Applicant hereby submits a new set of claims.

The new set differs from the claim set that was filed with the International Application in that the hydrocarbon feed to be alkylated is specified to be a saturated hydrocarbon feed. This limitation was originally present in claim 7. Accordingly, claim 7 has been cancelled, and the following claims have been renumbered.

Novelty and Inventive Step

Documents D1 and D2 both relate to the alkylation of aromatic compounds. Accordingly, as was recognized in the Written Opinion, claim 7 as-filed was both novel and inventive over the teachings of these references. Claim 1 now is limited to the saturated hydrocarbon feedstock of claim 7, and therefore is both novel and inventive over the cited references.

Scope

The Written Opinion objected to the scope of claim 1 as being much broader than the exemplified embodiments.
With the present amendment the scope of claim 1 is much reduced.
Importantly, as claim 1 is now limited to alkylation of saturated hydrocarbons, the claimed process is now limited to a single reaction mechanism. Alkylation itself is catalyzed by an acid. Applicant has limited its claims to solid acids. Furthermore, in the alkylation of saturated hydrocarbons hydrogen transfer is the rate determining step (see Specification at page 2, lines 14-17). For this reason the claimed catalyst also comprises a hydrogenation metal.

Since claim 1 is now limited to the alkylation of saturated hydrocarbons the skilled person will agree that results obtained with the exemplified embodiments can be generalized to catalysts comprising a solid acid and a hydrogenation metal, because both are needed for the reaction mechanism. Conversely, a catalyst comprising both a solid acid and a hydrogenation metal can reasonably be expected to catalyze the alkylation reaction of saturated hydrocarbons.
Applicant submits that the objections raised in the Written Opinion have been overcome with the amendments presented herewith.

Yours sincerely,

Jacobus C. Rasser

Kees Rasser
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CLAIMS

1. A process for alkylating a saturated hydrocarbon feed which comprises contacting the hydrocarbon feed to be alkylated with an alkylation agent in the presence of a catalyst comprising a solid acid, a hydrogenation metal, and 1.5 - 6 wt% of water, measured as the loss on ignition at 600°C.

2. A process according to claim 1 wherein the catalyst comprises 1.8 - 4 wt% of water.

3. A process according to claim 2 wherein the catalyst comprises 2 - 3 wt% of water.

4. A process according to any one of the preceding claims wherein the solid acid is selected from the group consisting of zeolites, silica-alumina, sulfated oxides, mixed oxides of zirconium, molybdenum, tungsten, or phosphorus, chlorinated aluminium oxides or clays, and mixtures thereof.

5. A process according to claim 4 wherein the solid acid is a zeolite selected from the group consisting of mordenite, zeolite beta, X-zeolites, and Y-zeolites.

6. A process according to any one of the preceding claims wherein the hydrogenation metal is a Group VIII noble metal.

7. A process according to any one of the preceding claims wherein the catalyst is prepared by adding water to a dry catalyst comprising solid acid and hydrogenation metal before use in the alkylation process.

8. A process according to any one of claims 1-7 wherein the alkylation process is started using a catalyst comprising less than 1.5 wt% water and wherein water is added to the catalyst during the alkylation process.

9. A process according to any one of claims 1-9 wherein water is added to the catalyst during the alkylation process by exposing a regenerated catalyst to a water-containing atmosphere, or by using a water-containing atmosphere during a regeneration step.